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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/090,315	06/04/1998	HOWARD E. RHODES	M4065.059/P0	3755
24998	7590	11/06/2003		
DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP 2101 L STREET NW WASHINGTON, DC 20037-1526			EXAMINER GEBREMARIAM, SAMUEL A	
			ART UNIT 2811	PAPER NUMBER
DATE MAILED: 11/06/2003				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/090,315

Applicant(s)

RHODES ET AL.

Examiner

Samuel A Gebremariam

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-4, 7-16, 28-30 and 32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-4, 7-16, 28-30 and 32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7, 3, 4, 8 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kenji JP patent No. 5690568 in view of Rostoker US patent No. 5,811,320 and in further view of Kelly et al. US patent No. 5,021,864.

Regarding claim 7, Kenji teaches (fig. 1 also refer to the English abstract) a semiconductor chip (1 and 2) encapsulated within the package, the chip including a photosensitive elements (1 and 2) for receiving an image and for generating corresponding signals, the semiconductor material encapsulated in a transparent material (7) and the transparent material having an optical light transmitting device (8) covering the photosensitive elements (1 and 2).

Kenji does not explicitly teach an array of photosensitive elements and a frame having a support structure.

It is conventional in the art and also taught by Rostoker forming more than one photosensitive element (fig. 1).

Furthermore Kelly teaches an improved die-mounting paddle (frame) for mounting die in a package.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to form a plurality of photosensitive elements as taught by Rostoker in the structure of Kenji in and mount the photosensitive element in the die mounting frame as taught by Kelly order to form a functional device and provide a die mounting structure with reduced mechanical stress (see abstract Kelly).

The recitation an imaging device has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Regarding claim 3, Kenji teaches substantially the entire claimed structure of claim 7 above including transparent material includes molded epoxy resin (7).

With regard to the limitation that the transparent material is injection-molded epoxy, this is considered a product-by-process claim. "[E]ven though product-by process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Regarding claim 4, Kenji teaches (fig. 1) substantially the entire claimed structure of claim 7 above including leads (pin, 6) connected to the semiconductor material, the leads being partially encapsulated in the transparent material (7).

Regarding claim 8, Kenji teaches substantially the entire claimed structure of claim 7 above including the optical light-transmitting device is formed of the transparent material (7).

Regarding claim 32, Kenji teaches substantially the entire claimed structure of claim 7 above including the optical light-transmitting device is a lens (8).

Claims 9, 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kenji, Rostoker, Kelly and in view of Park et al. US patent No. 5,053,298.

Regarding claim 9, Kenji teaches substantially the entire claimed structure of claim 7 above except explicitly stating the optical light-transmitting device is a color filter being formed of the transparent material.

It is conventional and also taught by Park (fig. 2) incorporating color filter patterns (49, 38 and 43) within transparent material (37).

It would have been obvious to one of ordinary skill in the art to incorporate the color filter patterns in the structure of Kenji in order to select the type of light that is reaching the photosensitive elements (1 and 2).

Regarding claim 10, Kenji teaches substantially the entire claimed structure of claim 7 above including a color filter array (38, 43 and 49, fig. 2, Park) into the transparent material (37).

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kenji, Rostoker, Kelly and in view of Anderton et al. US patent No. 5,596,228.

Regarding claim 2, Kenji teaches substantially the entire claimed structure of claim 7 above except explicitly stating that the photosensitive elements are arranged in a two dimensional array.

It is conventional and also taught by Anderton (col. 1 line 13-42) to arrange light sensitive elements in two dimensions.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to arrange the light sensitive structure of Kenji in two dimensions as taught by Anderton since most light sensitive elements in the art are arranged in array.

Claims 11-13, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rostoker, in view of Kenji and in further view of Kelly.

Regarding claim 11, Rostoker teaches (fig. 9, col. 9, lines 24-67) an imaging system, comprising: a system for transmitting an image including an image source (910) and a plurality semiconductor devices; the image source capable of simultaneously transmitting an image to a plurality of semiconductor devices (902, 904, 906); wherein the plurality of semiconductor devices includes first (902), second (904) and third (906) devices receiving the image and generating corresponding signals (col. 9, lines 29-33); and first, second and third packages (col. 9, lines 62-67) for protecting and supporting each of the first, second and third semiconductor devices.

Rostoker does not explicitly teach the package of first, second and third semiconductor device is formed of transparent material including injection-molded resin.

Further Rostoker does not teach each of the semiconductor devices on respective frames where each of the frames having a support structure.

It is conventional and also taught by Kenji (fig. 1) forming package structure using transparent material (7) using molded resin.

Furthermore Kelly teaches an improved die-mounting paddle (frame) for mounting die in a package (fig. 16 and 17).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the transparent material taught by Kenji in the structure of Rostoker in order to cut cost and mount the first, second and third devices in the die mounting frame as taught by Kelly order to form a functional device and provide a die mounting structure with reduced mechanical stress (see abstract Kelly).

With regard to the limitation that the transparent plastic material is injection-molded resin, this is considered a product-by-process claim. "[E]ven though product-by process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Regarding claim 12, Rostoker teaches substantially the entire claimed structure of claim 11 above including the image source includes a lens (col. 9, lines 33-36).

Regarding claim 13, Rostoker teaches substantially the entire claimed structure of claim 11 above including the first, second and third semiconductor devices include complementary color filters (col. 9, lines 37-40).

Regarding claim 15, Rostoker teaches substantially the entire claimed structure of claim 11 above including the first, second and third packages include red, green and blue filters (col. 9, lines 37-40).

Regarding claim 16, Rostoker teaches substantially the entire claimed structure of claim 11 above except explicitly stating that the first, second and third packages include cyan, magenta and yellow filters.

Rostoker teaches first, second and third packages including red, green and blue filters.

Cyan, magenta and yellow colors are fundamental colors that all colors are formed from. Furthermore cyan, magenta and yellow color filters are conventional in the art (Enomoto et al. US patent No. 5,933,183).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to form color filters based on the primary colors as claimed in the structure of Rostoker since cyan, magenta and yellow color filters are conventional in the art.

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kataoka et al. US patent No. 5,597,422 in view of Rostoker.

Regarding claim 28, Kataoka teaches a housing (the region surrounding 101) having a cavity and a bottom surface (fig. 1) a semiconductor chip (101) located within

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the cavity of the housing, the semiconductor chip (101) being covered by a transparent cover (103); the semiconductor chip being encapsulated in a transparent material (103) wherein the transparent material has an uppermost surface substantially planar to an uppermost surface of the package.

Kataoka does not teach a semiconductor chip including an array of photosensitive elements.

It is conventional in the art and also taught by Rostoker forming more than one photosensitive element (fig. 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to form more than one photosensitive element as taught by Rostoker in the structure Kataoka in order to form a functional device. The combined structure of Kataoka and Rostoker would inherently have an optical light-transmitting device.

The limitation for receiving an image and for generating corresponding signals is not given patentable weight. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

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Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kataoka, Rostoker in view of Shibata et al. US patent No. 4,827,118.

Regarding claim 29, Kataoka teaches substantially the entire claimed structure of claim 28 above except explicitly stating that the transparent cover includes color filter.

It is conventional and also taught by Shibata (fig. 1, col. 4, lines 36-57) incorporating color filter with transparent package material.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate a color filter as taught by Shibata in the structure of Kataoka in order to selectively transmit light of certain wavelength.

Regarding claim 31, Kenji teaches (fig. 1) substantially the entire claimed structure of claim 28 above including the housing is formed of molded plastic (20).

The combined structure of Kataoka and Shibata would inherently have a housing made of molded plastic.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rostoker, Kenji, Kelly and in view of Park.

Regarding claim 14, Rostoker teaches substantially the entire claimed structure of claim 11 above except explicitly stating that the complementary color filters are molded into the first, second and third packages.

It is conventional and also taught by Park molding color filters (49, 38, and 43, fig. 2) inside package material (37).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate color filter inside the package material as taught by Park in the structure of Rostoker in order to cut cost.

Response to Arguments

3. Applicant's arguments with respect to claims 2-4, 7-16 and 28, 29, 31 and 32 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel Admassu Gebremariam whose telephone number is 703 305 1913. The examiner can normally be reached on 8:00am-4: 30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on (703) 305-1690. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Samuel Admassu Gebremariam
November 3, 2003



EDDIE LEE
SUPERVISORY PATENT EXAMINER
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